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Health Consultation No. 2

PRECISION NATIONAL CORPORATION

CLARKS-SUMMIT, LACKAWANNA COUNTY, PENNSYLVANIA

CERCLIS NO. PAD053676631

NOVEMBER 5, 1998

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION NO. 2

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Prepared by:

Pennsylvania Department of Health
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

SUMMARY

This document responds to a request by the Environmental Protection Agency (EPA) that the Agency for Toxic Substances and Disease Registry (ATSDR) determine if residents near the Precision National Plating Services (PNPS) site are currently being exposed to hexavalent chromium in their private well water at levels that would harm their health. This consult also evaluates the threats posed by surface water (seeps) around the site and updates the status of locations for monitoring well installation. The wells will be used for defining the ground water plume. Our evaluation and conclusions in this document represent a follow-up to PNPS health consultation #1 (HC #1, October, 1998) prepared by the Pennsylvania Department of Health (PADOH) under Cooperative Agreement with ATSDR.

In HC #1, PADOH identified two private residential wells, two public wells, several groundwater seeps and recommended the locations for installation of monitoring wells that need to be sampled to identify sources of current exposure or to determine the extent of the contaminated groundwater plume. At the request of PADOH, PADEP sampled these areas for hexavalent chromium.

PADOH reviewed the sampling results and concludes (in this document) that the site is currently not a public health hazard for people using the public wells or for the families living near the site who continue to use their private residential wells (RW-2 & RW-4). All other residents near the site are believed to be currently using municipal water. PADOH also concludes that seep #5 is significantly contaminated with hexavalent chromium and water from this spring should not be used. PADOH recommends action be taken to prevent exposure of children and others to contaminated spring water at this seep.

To date, the extent of the contaminated groundwater plume originating from the PNPS remains undefined and PADOH continues to recommend that the installation of monitoring wells at locations slightly adjusted from those we recommended in PNPS HC #1 be completed. Conclusions and recommendations in this document are site-specific.

BACKGROUND AND STATEMENT OF ISSUES

This document addresses EPA's request for assistance. Specifically this health consult determines if residents near the Precision National Plating Services (PNPS) site are currently being exposed to unfiltered, hexavalent chromium in their private well water at levels that would harm their health. This consult also evaluates the public health significance of people near PNPS being exposed to hexavalent chromium in surface water (seeps) around the site and updates the status of monitoring well locations for defining the ground water plume.

PNPS owns and operates a chromium plating facility at 198 Ackerly Road, approximately 0.75 miles north of Clarks-Summit, Pennsylvania (Figures 1-3). The 46-acre property is located in a rural area and has operated as a plating facility since 1956. The previous owner operated the facility from its inception in 1956 until 1971, for plating and machining locomotive crankshafts. PNPS acquired ownership of the site in 1971. PNPS limited operations at the facility to locomotive crankshafts until 1975, when the company added a cylinder-lining division. An addition to the plant was constructed in 1975, to accommodate the plating of cylinder linings [1]. Historical data indicates that hexavalent chromium has migrated off the site in groundwater and has contaminated nearby residential wells [1,2,3].

The site is located in a mountainous region of northeastern Pennsylvania at an elevation of approximately 1,190 feet above mean sea level (amsl). A topographic high of 1,240 feet amsl is located approximately 400 feet south of the facility. Based on topographic data, the direction of surface drainage at the site is to the north-northwest (downhill) at a gradient of approximately 660 feet per mile. The surrounding area is drained by Ackerly Creek and its tributaries which flow generally to the northwest toward Glenburn Pond (Figure 2).

In response to a request by EPA that ATSDR determine if residents near PNPS are currently being exposed to hexavalent chromium in their private well water at levels that would harm their health, PADOH recommended in HC #1 locations for installation of monitoring wells and identified residential wells, public wells, and seeps that may be contaminated. PADOH recommended that they be sampled for hexavalent chromium to determine the potential for current exposure to this site contaminant by children and others who live or recreate near the PNPS site. Following installation and sampling of groundwater in the monitoring wells, PADOH will evaluate the results of this sampling and determine the public health significance of their findings.

On May 7, 1998, at the verbal request of PADOH (prior to the publication of PNPS HC #1), Joe Iannuzzo, PADEP, project officer, and John Mellow, PADEP, hydrogeologist, sampled seeps numbers one and five (S1 & S5), residential wells one and two (RW-1 & RW-2) and public well number one (PW-2) for total (all forms or valences) and filtered and unfiltered hexavalent chromium (Figure 3). These locations are down gradient of the site. Robert M. Stroman and J.E. Godfrey, PADOH, accompanied and participated with PADEP during the sampling.

On August 12, 1998, PADOH staff in conjunction and collaboration with Sarah Caspar, EPA's On-Scene Coordinator and Bruce Rundell, EPA's hydrogeologist for the site, slightly modified the placement of well locations originally recommended in PNPS HC #1. PADOH recommends adjusted well and well cluster locations shown in Figure 3.

DISCUSSION

This discussion addresses the public health significance of the May 7, 1998, groundwater (private and public wells) and surface water (seeps) sampling conducted by PADEP. It also addresses groundwater flow direction, and the need for installation and sampling of previously recommended monitoring wells near the site.

Hand dug well number one (HDW-1) lies along Arch Avenue and RW-1 is located in a vacant lot along Ackerly Road (Figure 3). These wells are not currently used. PW-1 is located at the Ackerly Fairgrounds. PW-2 lies adjacent to the pond and is used by a restaurant (Figure 3). RW-2 lies south of Ackerly Creek along Arch Avenue and Ackerly Road and RW-4 is located north of Ackerly Creek (Figure 3). PADOH reviewed PADEP's sampling results for RW-1, for people using PW-2 and for families living near the site who use RW-2 and RW-4. Unfiltered hexavalent chromium was not detected in RW-1, PW-2, RW-2, and RW-4 at concentrations of above the detection limit of 10 $\mu\text{g/L}$. Unfiltered hexavalent chromium is discussed because people are exposed to unfiltered water in public and residential settings and the hexavalent form of chromium is the most toxic valence states. HDW-1, PW-1, and RW-3 were not sampled. RW-2 is cased to 150 with a total depth of 178 feet. We are confident that deep groundwater in the area of PW-2, RW-1 and RW-2 is not contaminated from the PNPS. All other area residences near the site are believed to be currently using municipal water.

There are three seeps (S-1, S-2 & S-3) that lie west of the site on the property served by PW-2 (Figure 3). S-1 and S-2 feed the pond on this property. Unfiltered hexavalent chromium was detected in S-1 at a concentration of 13.0 micrograms per liter ($\mu\text{g/L}$). S-2 and S-3 were not sampled, but it is possible that they are also contaminated. The concentration of hexavalent chromium in S-1 is below EPA's Maximum Contaminant Level for drinking water and could simply represent "background" conditions for groundwater or it could suggest a source of contamination topographically upgradient of the spring. The area upgradient of S-2 is a hill south of the site which has not been previously identified to PADOH as a confirmed contaminant source area (Figure 2). Whatever the source of chrome at this property, we are led to conclude that only shallow groundwater (within 150 feet of the surface) is affected. Four to five foot rock casings house S-1 and S-2 as surface water from them enters the pond. It is unlikely that children or others trespass on the property and either scale the rock enclosures or enter the springs from the pond to attempt to drink the surface water as it enters the pond. S-3 soaks the ground adjacent to the seep, however, it does not generate enough surface water flow to represent a significant exposure point. We do not believe routine exposure to surface water from any of the seeps on this property is occurring and therefore do not believe they represent a public health threat.

S-5 lies northwest of PNPS adjacent to the Ackerly Fairgrounds (Figure 3). Unfiltered hexavalent chromium was detected in this spring at a concentration of 3350.0 $\mu\text{g/L}$. This level represents a significant degree of contamination and the surface water at the spring should not be consumed. S-6 was not sampled because of sampling difficulty, but due to its proximity to S-5, it is also likely to be contaminated. There is no indication that children (or adults) are drinking water from

these seeps. Nevertheless, we believe that appropriate action is necessary to prevent public exposure to surface water at both of these springs.

To date, the extent of the contaminated groundwater plume originating from the PNPS remains undefined and PADOH continues to recommend that the installation of monitoring wells at the locations recommended in this document be completed. The locations have been slightly adjusted from those appearing in PNPS HC #1 based upon further data review, access requirements, and further collaboration with PADEP. Our goal of determining plume boundaries (PNPS #1) has not been compromised by our recommended adjustment of the well locations.

The expected groundwater flow directions at this site are primarily topographically controlled (Figure 2). They will be somewhat modified by bedrock fractures (joints) as indicated in Figure 4. The flow line near the center of Figure 2 suggests the possibility of underflow beneath the tributary to Ackerly Creek. We recommend monitoring well clusters 3 and 6 to help determine whether underflow is occurring and, hence, the extent of groundwater contamination further down the valley (Figure 3). The other recommended wells (M-1, M-2, M-4 & M-5) will further define the plume between PNPS and the tributary to Ackerly Creek.

CONCLUSIONS

PADOH concludes that the site is currently not a public health hazard for people using public well PW-2 or for the family living near the site who continues to use private residential well RW-2. All other area residences near the site are believed to be currently using municipal water and we are unaware of any current exposure to site contaminants through the use of private well water.

PADOH also concludes that seep #5 (and possibly seep #6) is significantly contaminated with hexavalent chromium, and water from these springs should not be used. As part of ATSDR's Child Health Initiative, ATSDR public health consultations indicate whether any site-related exposures are of particular concern for children. There is no indication that children (or adults) are drinking water from these springs. Nevertheless, appropriate action is necessary to prevent public exposure to surface water at these springs.

RECOMMENDATIONS

1. Take action to prevent exposure of people to contaminated spring water at seep #5 and #6.
2. Install the monitoring wells (first recommended in ATSDR's PNPS HC #1) at adjusted locations identified in this HC and sample them for hexavalent chromium to determine the extent of the contaminated groundwater plume originating at the PNPS. EPA will request PNPS to implement this recommendation. PADOH will review the results of the

monitoring well sampling when they are available and determine if public health may be impacted.

3. Sample off-site monitoring wells (including RW-3 which serves as a monitoring well) for hexavalent chromium quarterly for at least two years. After two years of data acquisition, a less frequent sampling cycle may be implemented based on a review of data and recommendations by EPA and PADEP. Laboratory methodology including method detection and reporting limits should conform to EPA guidelines for drinking water analysis. EPA will assure that the wells are sampled. EPA and PADEP will review the sampling results, determine if further sampling is warranted, and if so, make appropriate recommendations for the frequency of future sampling.

REFERENCES

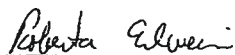
1. Engineering Evaluation/Cost Analysis Precision National Plating Services, Inc., Clarks Summit, Pennsylvania. Geraghty & Miller. October 1996.
2. Analytical Database Release 1.0, Precision National Plating Services, Inc., Clarks Summit, Pennsylvania. February 1988.
3. PADEP files, Wilkes-Barre Regional Office.

PREPARER OF REPORT

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Health Assessor
Pennsylvania Department of Health

CERTIFICATION

The Precision National Plating Services Site Health Consultation #2 has been prepared by the Pennsylvania Department of Health under Cooperative Agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated.



Roberta Erlwein

Technical Project Officer, SPS, SSAB, DHAC

The Division of Health Assessment and Consultation, ATSDR, has reviewed this Health Consultation and concurs with its findings.



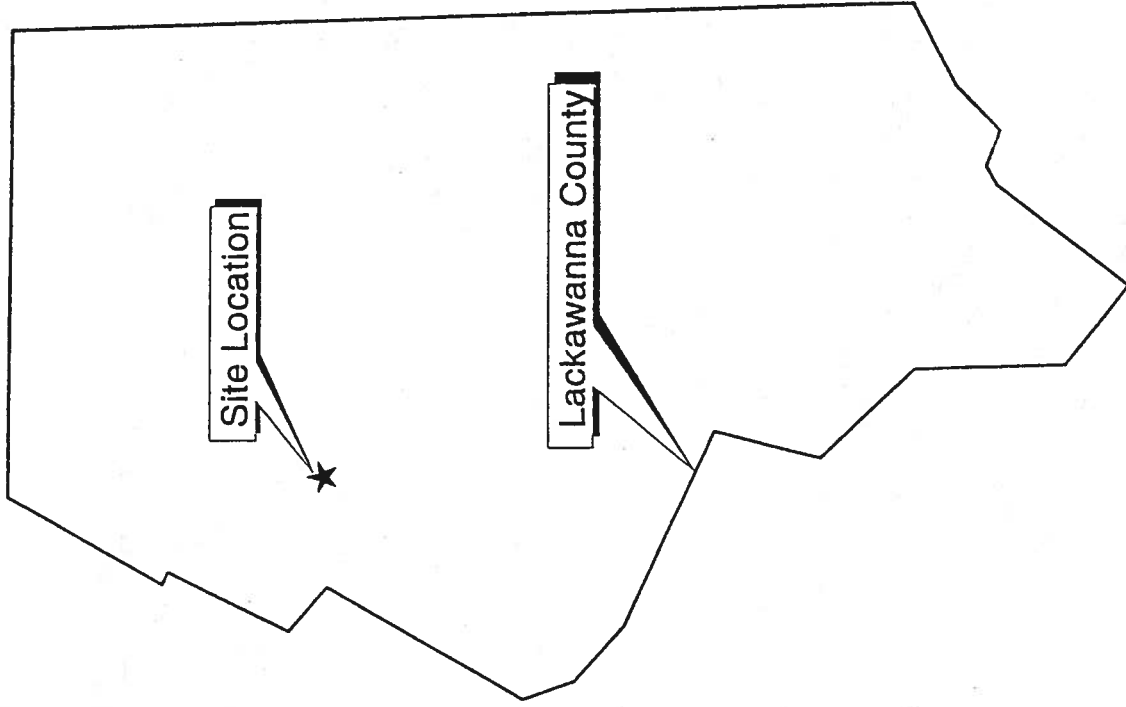
Richard E. Gillig

Chief, SPS, SSAB, DHAC, ATSDR

FIGURES

Figure 1

Precision National Site Location Map



Legend

 Lackawanna County



5 0 5 10 Miles

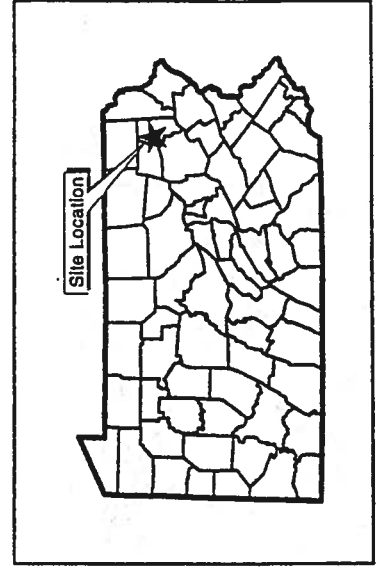
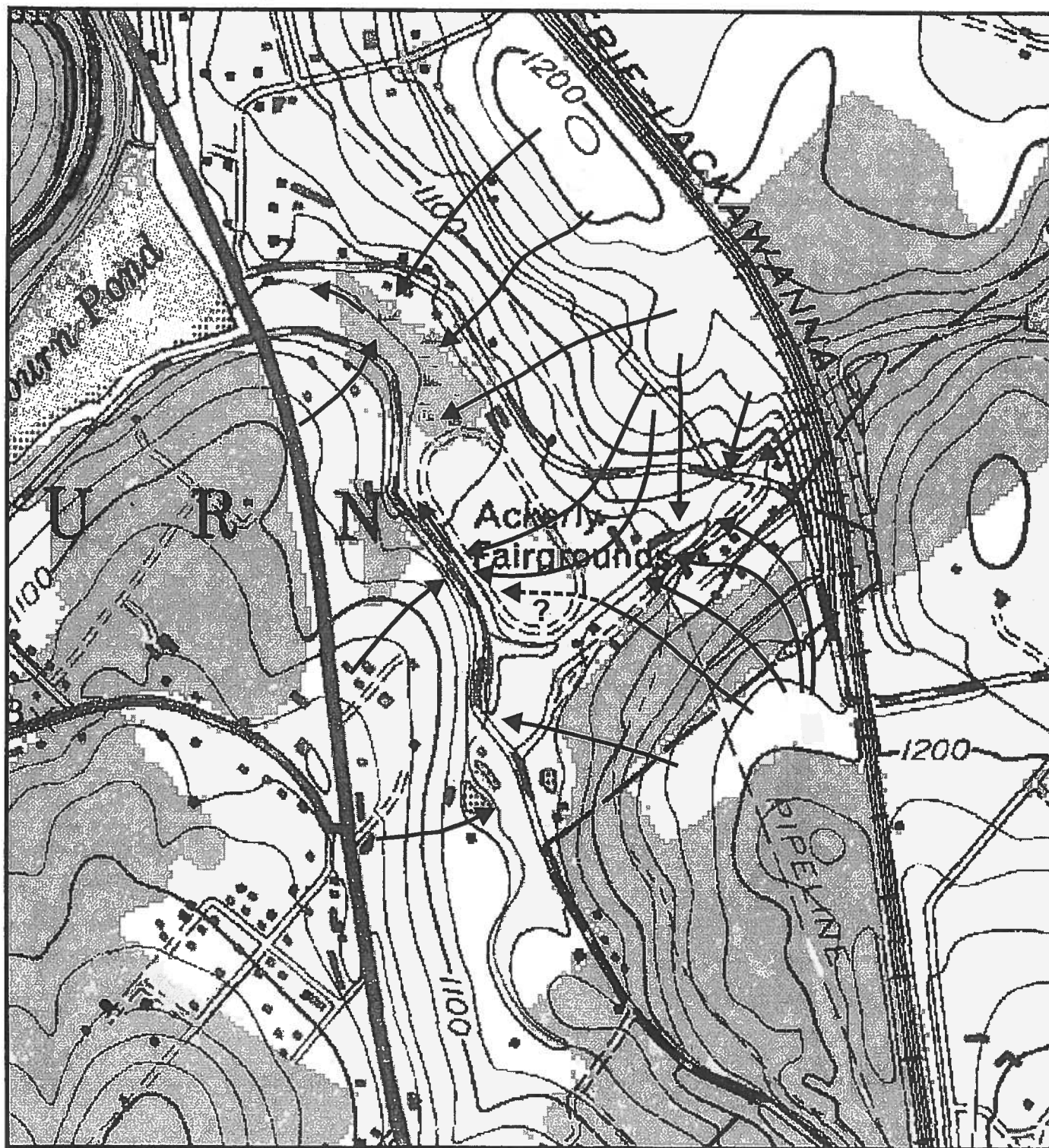


Figure 2

Precision National
Groundwater Flow

(Arrows indicate direction of groundwater flow)



1,000

0

1,000

2,000

3,000 Feet



Figure 3

Precision National
Residential and Public Wells;
Seeps and Adjusted Recommended Monitoring Well Locations

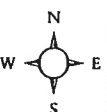
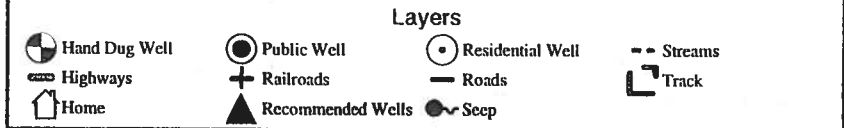
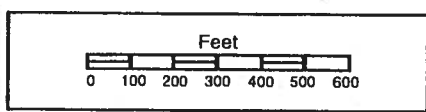
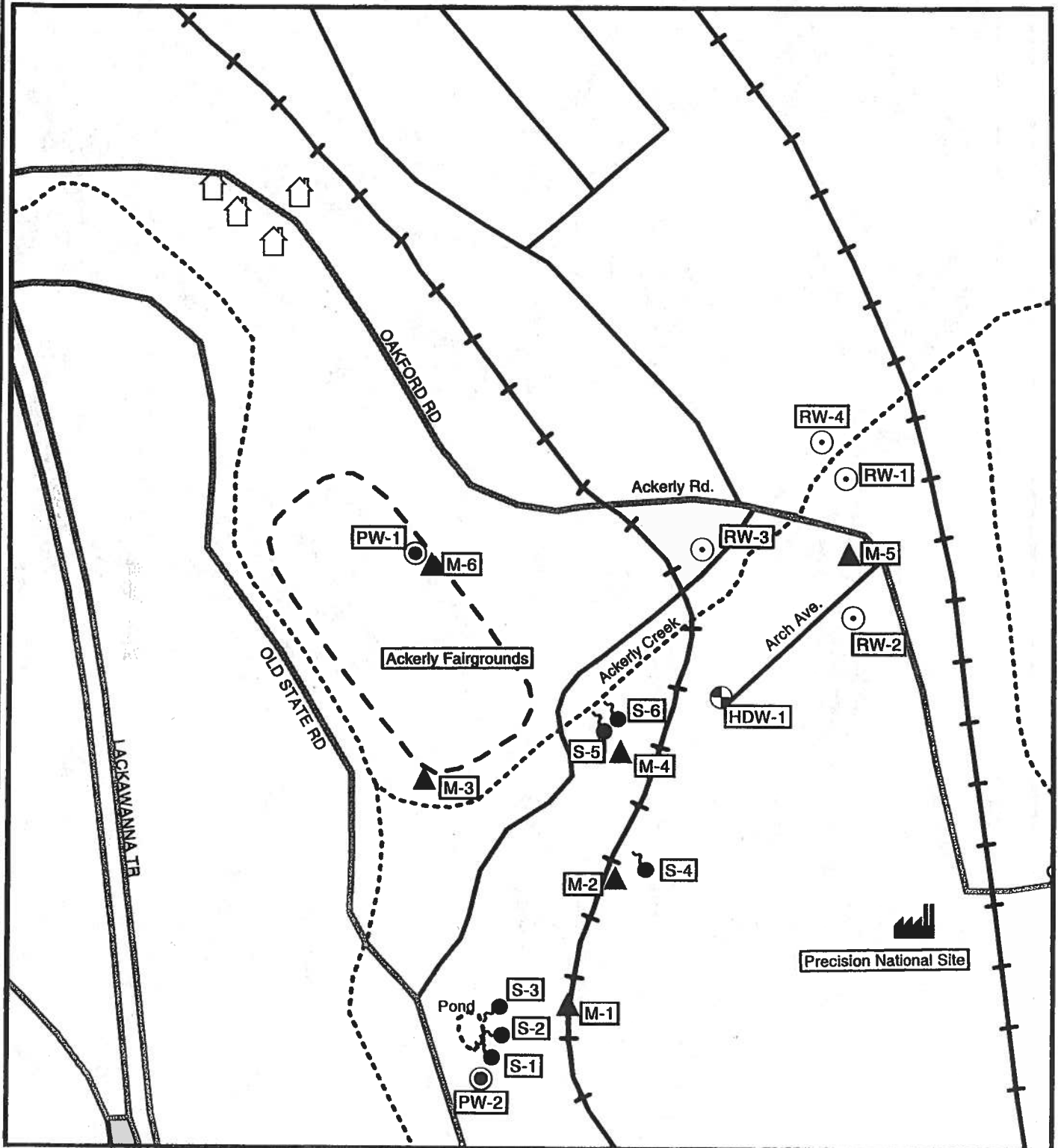
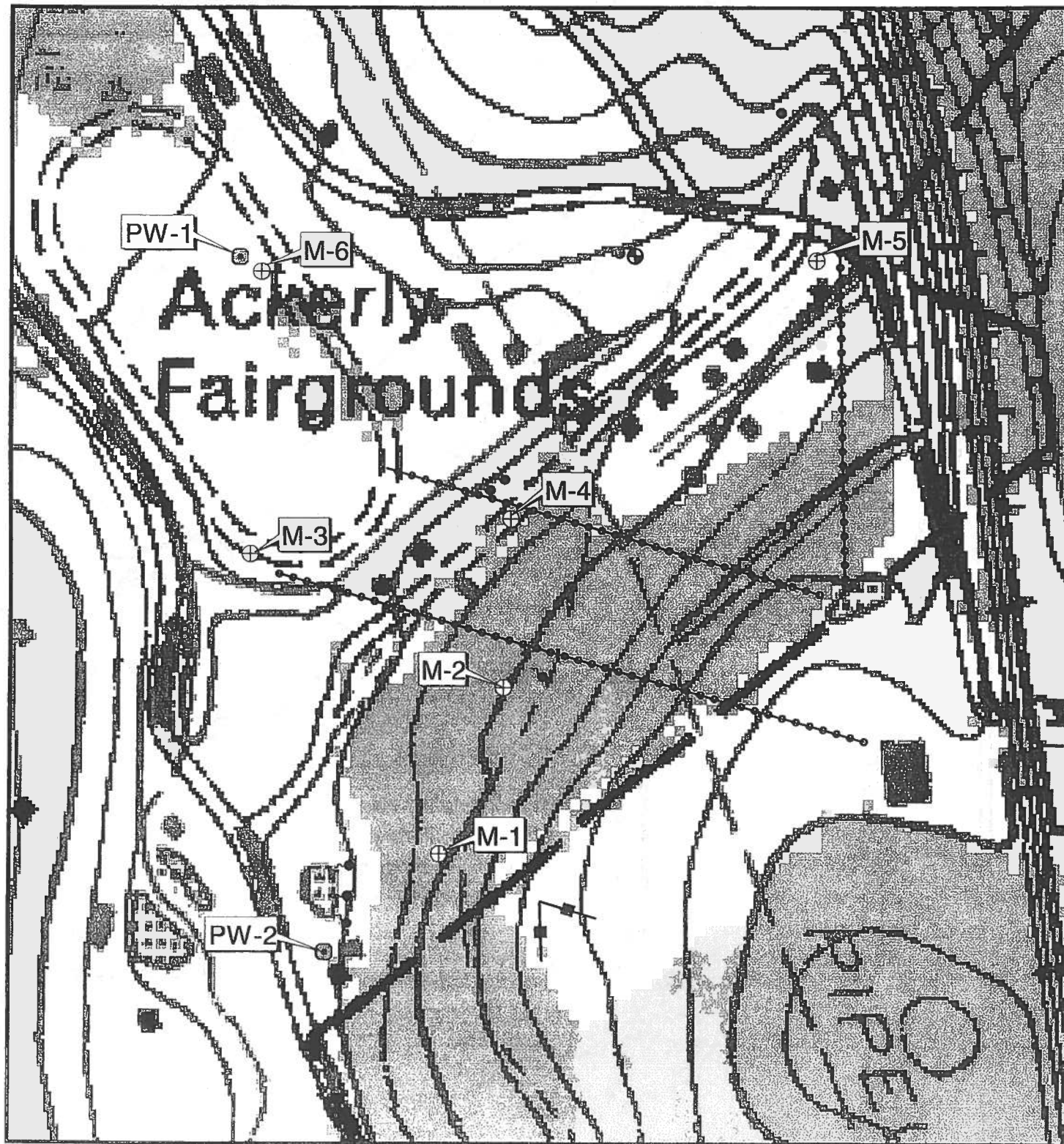


Figure 4

Precision National Recommended Monitoring Well Locations



200 0 200 400 600 800 Feet



Legend

- ⊕ Recommended Mon. Well
- ⊕ New Altier Well
- Public Well
- Seep
- Trend of Vert. Jnts.
- Vertical Joint